

## REMARKS

### The amendments:

Claims 1-6 are pending in the application. Claims 7 and 8 stand withdrawn. Claim 1 and claim 2 have both been amended by deletion of "H" from among the values of R<sub>1</sub> and R<sub>2</sub>, and by deletion of "alkyl" from among the values of R<sub>3</sub>. Claim 2 is also amended by deletion of "R" from among the values of X. Claim 4 has been amended by replacement of the chemical structure; in the new structure "W" has been replaced by "O". Support for the amendment is found in Formula 4 of the specification.

Claims 1-4 and 6 have been amended by adding "wherein each heterocycle is independently a 5- or 6-membered heterocyclic rings containing at least one atom of S, N, or O." Support is found in the paragraph bridging pages 3 and 4.

Claims 1-4 and 6 are also amended by adding "wherein substituted groups are substituted with one or more substituents selected from the group consisting of NH<sub>2</sub>, OH, SH, NC, C(O)OR, aryl, alkyl, alkenyl, alkynyl, F, Cl, Br, I, NHCOR, NHCONH<sub>2</sub>, NHCSNH<sub>2</sub>, OCH<sub>2</sub>COOH, OCH<sub>2</sub>CONH<sub>2</sub>, OCH<sub>2</sub>CONHR, OC(Me)<sub>2</sub>COOH, OC(Me)<sub>2</sub>CONH<sub>2</sub>, NHCH<sub>2</sub>COOH, NHCH<sub>2</sub>CONH<sub>2</sub>, NSO<sub>2</sub>R, NSO<sub>2</sub>CF<sub>3</sub>, PO<sub>3</sub>H, SO<sub>3</sub>H, (CH<sub>2</sub>)<sub>1-3</sub>COOH, CH=CHCOOH, O(CH<sub>2</sub>)<sub>1-4</sub>COOH, NHCOCH<sub>2</sub>CH(OH)COOH, CH(COOH)<sub>2</sub>, CH(PO<sub>3</sub>H)<sub>2</sub>, OCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>COOH, and NHCHO." Support is found on page 5, and on page 4 ("halogen ... refers to fluorine, chlorine, bromine, and iodine.")

Claim 8 is amended to recite "a therapeutically effective amount" and to recite that the method is a method of treating hepatitis C. Support is found in paragraphs 37 and 39.

In connection with all amendments that narrow the scope of the claims, Applicants expressly reserve the right to prosecute broader claims in this or subsequent applications.

### Rejection of claims under 35 USC 112

Claim 4 has been rejected under 35 USC 112 for lack of written description, because the variable "W" was not defined in the specification and claims. This "W" (which was defined in the priority application as being O or S) has been replaced with "O" by the present amendments, and withdrawal of the rejection is accordingly requested.

Claims 1-4 and 6 are rejected under 35 USC 112 for being indefinite. The Examiner contends that the term “heterocycle” is not clear, even in light of the specification, basing this contention on the proposition that “more than one definition of the general term heterocyclic ... is accepted” by those of ordinary skill in the art. Applicants respectfully traverse, and submit that there are no plausible substituents that could be employed in making the compounds of the invention, such that those skilled in the art would not know whether or not they were heterocycles and thus within the scope of the claims.

Nonetheless, in order to expedite prosecution, claims 1-4 and 6 have been amended to define the term “heterocycle” as “a 5- or 6-membered heterocyclic ring containing at least one atom of S, N, or O”, which is the phrase used in the specification to describe typical heterocycles. Applicants respectfully submit that this provides a clear and definite meaning, as there can be no question among those skilled in the art whether a ring is 5- or 6-membered, or whether it contains an atom of S, N, or O. Accordingly, withdrawal of the rejection in view of the amendment is respectfully requested.

The Examiner asserts that “fused” heterocycle is unclear, because there is no limit as to what the heterocycle is fused to, and because the explanation of “fused” provided in the specification (a ring “covalently bound” to another) is inadequate. Applicants respectfully traverse. As conceded by the Examiner, there is an art-accepted meaning of the term “fused”, namely a ring that is bonded to [in fact, shares] two atoms of another ring. Applicants submit that the description of fused rings in the specification is not incorrect: fused rings are indeed covalently bonded. This characterization ignores the additional degrees of connectedness, but no practitioner skilled in the art, reading the specification, would understand “fused” to have any meaning other than its art-accepted meaning. For this reason, Applicants respectfully submit that, the term “fused” as used in the claims is not unclear to the skilled person.

The specification states that fusion is to “another ring or heterocycle”, and not to “other rings or heterocycles”. The use of the singular clearly conveys that only a single additional ring is fused to the parent aryl or heterocycle. The limited number of ring systems encompassed by the definitions of “aryl” and “heterocycle” leads to a limited number of permutations of fused rings, so that the claims are necessarily definite. In light of the amendments and the preceding remarks, Applicants respectfully request reconsideration and withdrawal of the claim rejections based on the terms “heterocycle” and “fused heterocycle”.

Applicants assume that claims 1-4 and 6 are rejected under 35 USC 112 for being indefinite on the grounds that the recitation “substituted” is unclear without a recitation of the substituents. (The Examiner has not explicitly stated this, but it seems implicit from the Examiner’s discussion of the issue (page 6, third paragraph of Office Action). Applicants traverse, and point out that the claim language refers to the existence of a substituent, which is clear, unambiguous, and does not render unclear what is or is not within the scope of the claim.

Nonetheless, in order to expedite prosecution, claims 1-4 and 6 have been amended to recite the substituents listed in the specification, and reconsideration and withdrawal of the rejection in view of the amendment is accordingly requested.

The Examiner has noted that the variable “R” defined in claim 6 has no basis in “Formula 7”, the associated chemical structure. Applicants have amended claim 6 by deleting one reference to “R”, but in view of the introduction of “R” in the list of substituents, a second reference and definition has been retained. This second definition is consistent with the definitions of R in the preceding claims. In view of the amendments, Applicants request withdrawal of the rejection of claim 6 on these grounds.

### **Rejection of claims under 35 USC 102**

Claims 1 and 2 are rejected under 35 USC 102(e) as anticipated by Bush et al., U.S. application publication 2004/0006104. Applicants have amended claims 1 and 2 to delete H as a possible value for R<sub>1</sub> or R<sub>2</sub>, removing the compounds of Bush et al. from the scope of the claims.

Claim 2 is rejected under 35 USC 102(a) and (e) as anticipated by Sessler et al., U.S. Patent No. 6,482,949. The Examiner states that Sessler et al. was published “before invention was made by applicants. Applicants traverse, and do not concede that Sessler et al. is prior art. In order to facilitate prosecution, however, Applicants have amended claim 2 to remove “R” (and thereby remove H) as a possible value for substituent X. The amendment removes the compound of Sessler’s Example 20 from the scope of the claim.

Claim 2 is rejected under 35 USC 102(a) and (e) as anticipated by a variety of prior art quinoxaline and phenazine carboxylic acid esters, disclosed in Kaneko et al., U.S. Patent No. 6,518,423; Lubish et al., U.S. Patent No. 6,103,720; Schlunke and Ronco, U.S. Patent No. 3,656,953; J.A. Silk, *J. Chem. Soc.* 2058 (1956); and Gum and Joullié, *J. Org. Chem.* 30:3962

(1965). The amendment removing H as a possible value for the substituent X in claim 2 removes from the scope of the claim all prior art esters disclosed in these references.

Claim 2 is rejected under 35 USC 102(a) and (e) as anticipated by two phenazine carboxamides disclosed in the Chemical Abstracts abstract (CA 74:87918) of Batulina et al., *Khim.-Farm. Zh.* 4:18 (1970). The N-phenazinoyl glycine ethyl ester (RN 30806-87-2) is removed from the scope of claim 2 by the amendment that removes H as a possible value for the substituent X, while the phenazinoyl valine ethyl ester (RN 30905-67-0) is removed from the scope of the claim by the amendment that removes “alkyl” as a possible value for R<sub>3</sub>.

Claim 1 is also rejected under 35 USC 102(a) and (e) as anticipated by the phenazinoyl valine ethyl ester (RN 30905-67-0). As with claim 2, the compound is removed from the scope of the claim by the amendment that removes “alkyl” as a possible value for R<sub>3</sub>.

Claim 2 is rejected under 35 USC 102(a) and (e) as anticipated by Spicer et al., *Anti-Cancer Drug Des.* 14:281 (1999). Compound 9 of Spicer is removed from the scope of claim 2 by the amendment that removes H as a possible value for the substituent X.

## CONCLUSION

Applicants believe that the present amendments do not add new matter, and entry thereof is respectfully requested. In view of the amendments, and in view of the above remarks, Applicants request reconsideration and withdrawal of all grounds for rejection of the claims. The Examiner is cordially invited to call Applicants' undersigned agent if there remain any issues that might be resolved with a telephone interview.

Respectfully submitted,  
Brown Raysman Millstein Felder & Steiner L.L.P.

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Date

by: James P. Demers  
James P. Demers  
Reg. No. 34,320

BROWN RAYSMAN MILLSTEIN FELDER & STEINER LLP  
900 Third Avenue  
New York, New York 10022  
Tel: (212) 895-2000  
Fax: (212) 895-2900